MA 160 Dr. Katiraie **USING CHAIN RULE**
Section 3.4

1. Find each derivative.

(a) $f(x)=\sqrt{x^2+1}$	(c) $f(x)=(x^3-1)^{100}$
(b) $f(x)=e^{x^2}$	(d) $f(x)=2^x$

2. Find an equation of the tangent line to the curve

$f(x) = (1+2x)^{10}$ when x = 0

3. Find an equation of the tangent line to the curve

$f(x) = x^2 - 2^x$ when x = 3

Answers

1. (a) $f'(x) = \dfrac{x}{\sqrt{x^2+1}}$

(b) $f'(x) = e^{x^2} 2x = 2xe^{x^2}$

(c) $f'(x) = 100(x^3-1)^{99} 3x^2 = 300x^2(x^3-1)^{99}$

(d) $f'(x) = 2^x \ln(2)$

2. $y = 20x + 1$

3. $y = 0.45x - 0.35$